

ABSTRACT

Novel metal oxide compositions are disclosed. These ferromagnetic or ferrimagnetic compositions have resistivities that vary between those of semiconducting and insulating materials, and they further exhibit Curie temperatures greater than room temperature (i.e., greater than 300K). They are perovskite structures with the general chemical formulas $(A_{1-x}M_x)BO_3$, $(A_{1-x}M_x)(B'B'')O_3$ or $A(B_{1-x}M_x)O_3$, where A can be a 1^+ , 2^+ and 3^+ charged ion; B can be a 5^+ , 4^+ , 3^+ charged ion; B' and B'' can be $2+$, 3^+ , $4+$, $5+$ and 6^+ charged ion. M is a magnetic ion dopant. X-ray diffraction patterns are presented for exemplary compositions.